

Biogeosciences Discuss., community comment CC1
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Comment on bg-2022-223

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Community comment on "Assessing impacts of coastal warming, acidification, and deoxygenation on Pacific oyster (*Crassostrea gigas*) farming: a case study in the Hinase area, Okayama Prefecture, and Shizugawa Bay, Miyagi Prefecture, Japan" by Masahiko Fujii et al., Biogeosciences Discuss., <https://doi.org/10.5194/bg-2022-223-CC1>, 2022

Major comments

This study mentioned about the development of continuous monitoring systems for coastal warming, acidification and deoxygenation in the local areas in Japan by observation and modeling. In addition, they try to project the future situation under the IPCC scenario.

Reading through this manuscript, I thought that the volumes of each section are unbalanced. Especially, the volume for the result section is too short, compared to the volumes of introductions and methods.

I believe that one of the highlights in this study is to develop the model for the specific coastal area. Therefore it would be better to add more analysis by using the model outputs to show how their model is reproduced well in this target coastal area. At that time, seasonal horizontal distributions of each variable could be useful with comparison of the other observational data. Probably DIC and ALK are probably difficult to be got horizontally, but temperature and salinity, oxygen data could be available if you try to find in Japan. These improvements could make you deepen for your understanding of the model, which will make useful for your future study.

Minor comments

Abstract:

The sentence of the abstract should be blushed up. The current abstract was not a self-contained summary of your work. Method, how to examine and what you found should be included. The sentence "Coastal warming, acidification, ... to facilitate mitigation measures" can be shorten. The sentence "To minimize... oyster farming practiced locally might also be required" is not necessary.

Title:

After revising the manuscript, I suggest you reconsider the title. The current title does not

reflect the content of the current manuscript.

1. Introduction:

The sentences are too long. The sentence can be shorter. The current manuscript is divided into 5 sections (1.1, ~ 1.5), but I think it would be better to write it all in one. When you improve the manuscript, you also think about the balance of the volumes in the section. The volume of the introduction is heavy compared to the results, discussion and conclusion sections.

2.1 Study sites:

This section is also too heavy, compared to the results, discussion and conclusion sections.

3.1 Observed results:

The current version has been divided the section into 3.1.1~3.1.7, but you don't need to divide individually. Please reconsider this part.

3.2 Modeling results:

The results of the numerical models are necessary. Please put additional analysis such as horizontal distributions and so on to show how the model reproduces in this target area horizontally and timely.

Section 3.2.2 Future projection:

This section is a discussion matter. This part can be moved to the discussion section if you add analyses of the model reproducibility.

Section 4.2:

The section 4.2, 4.2.1 and 4.2.2 can be moved to the conclusion section. Please reconsider your construction.

Please add references after the sentence (Extreme events such as severe...intensely in the future) in page 16.

5. Conclusion:

The conclusion should be improved. Basic conclusion includes the purpose, the summary of this study and self-evaluation/prospects.

Fig 1:

The information of latitude and longitudes are necessary. Right figures are not appropriate in scientific papers. I think that making an original map by yourself is necessary. In that case, Japanese character should not be included in your map. Right figure is relatively too small.